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Technological city and cultural criticism: challenges, limits, politics

Paolo Pileri

Abstract

Background: Technology has become a 'life companion' in our cities. Thanks to its fascinating power and the huge economic interest behind it, technology has recently reached an 'epic' role in our expectations for exiting the profound crisis we are in. The city represents the perfect place for such a marvel. Even if we really cannot get along without it, nevertheless technology has a 'dark side' that needs to be known.

Methods: In this, paper we try to understand if and why we have to protect the place of the critical debate starting from our cities. Do the problems of our cities really have to do with the lack of technologies?

Results: Critical thinking makes us understand that we need to enforce the tools that people can use to recognize the benefits and menaces of technologies, avoiding the illusion of embracing the idea of a city that is good just because it is 'smart'. Innovation and equity are not two spontaneously cooperating issues.

Conclusions: Urbanism and urban politics have new challenges ahead that are harder than we think. This paper presents five proposals to open a discussion suggesting some first steps.

Introduction: the profound crisis and the technological hope

For several years now, we have been in a state of profound crisis and the hope of finally exiting it fills the pages of the daily newspapers. Technology, in its various forms and applications, is hailed along with its "marvellous" promise. This affirmation hides the formation of a precise awareness that also carries the risk of a new illusion (or delusion). It was almost with these very words that Ivan Illich began his treatise, *Energy and Equity* (Illich, 1974), where he critically opposes the assumption that energy irrespectively guarantees wellbeing. Can we therefore today find a parallel between technology and Illich's comments on energy? Perhaps, and to begin with (and not by chance), what we call a crisis seems more to be a passage to another epoch that is violently manifesting itself. To acquire this awareness — of a passage of time versus "not-a-crisis" that can return to the past — it would help us to understand that nothing will return to its previous state and this way we can avoid living in an illusion that prevents us from adequately planning for changes that our societies and lives are already experiencing. This is not a temporary crisis. We cannot and must not believe in a restoration or the return of a variation of yesterday. Tomorrow will be radically different. If we were to reflect on our contemporary situation as a true passage of time as opposed to a temporary crisis, we would begin to understand that we must correct several attitudes and structural errors that we initiated sixty years ago. But recently, a new cunning ecological disguise makes our errors seem less serious and makes us feel less culpable. Much of this has to do with the cities in which we live and grow, where we are more concentrated, where we debate, elaborate, exchange, and filter ideas and innovations and where we pollute, consume, and purify. It is in cities that the largest technological networks take shape and where the "miraculous promise" of technology most quickly spreads[1]. It is here that we unwisely place our trust in an improbable restoration of the past and/or in a new renaissance.

Not coincidentally, we called this new urban renaissance 'the smart city,' alluding to a city where the leadership of the new technologies will sweep away the problems facing the European city and that the current crisis has further highlighted. What is better than the certain promise of a

Correspondence: paolo.pileri@polimi.it
Politecnico di Milano, Department of Architecture and Urban Studies (DASTU), Milano, Italy

technological remedy to the uncertainty of the crisis? Little or nothing, especially considering the state of our tired and tried society afflicted by serious problems of inequality, unemployment and economic failure. We are therefore ready to spend our last dollar on a technological marvel if it promises to pull us from the brink of disaster and designs a future where we no longer need the capacity for free and original intuition but instead we exchange true critical thinking for superficiality. The vehemence with which technology has entered our daily lives is symptomatic of our diminishing ability for critical analysis. Often it seems we give up stepping back from novelty to take stock of its effects and to interpret what its (unintended) consequences are. Today, critical reflection seems to be relegated to the brief instant in which we breathlessly ask "*are we so certain that technology does not have a 'dark side'* (Granelli, 2013) *that may prove to have a 'boomerang' effect?*" This question is delicate and controversial. In order to understand it better, we need to slow down and take the time to distinguish, feel, and react instead of blithely following the deafening culture of speed that is now also dominant in contexts where scientific research and political debate take place. These ought to be, above all, places that protect and encourage candid debate to develop and keep alive the scientific method of critical thinking that should not surrender itself to the pleasures and marvels promised by novel technologies. If it comes to pass that we give up the critical insight that provides us with sober second thought, society will easily fall victim to the first dominant fad and will no longer be able to hear anything other than "yes, there is a crisis." The great technological revelation is so persuasive that we are surrendering to technology our power and agency to determine our own future. All of this requires a debate and reflection on the issues from a different point of view in the face of all the forces that would have us sacrifice critical analysis for greater convenience. Society and not the individual must provide and protect the space of critical thinking: "*we have the horror of all that is uncompounded, heteroclite, and accidental, and we try — even physically — to limit ourselves, to provide ourselves a frame, to insist on a conclusive presence. We are convinced that a great revelation can come only from stubborn insistence. We have nothing in common with travellers, investigators, adventurers. We know that the safest and fastest way to amaze ourselves is to set off undeterred for the same object. And in a moment, this object will seem miraculous, even if we have never seen it*" (Pavese, 1947). Being willfully blind is an atrocity for free thinking but this is what is happening more and more every day. "*We are losing the understanding of the effects of anthropic activities boosted by technologies upon the environment. But the consumerist economic system, rather than regretting this ignorance, takes it over willingly.*" (Sertorio, 2002).

Discussion: The urgent need to know and understand how to engage technology. New ethics?

The technological revelation questions, once again, our lifestyle and our relational intentions with ourselves, with others, and with nature (and this is the real question). *"At the top of this approach, man has built a vision of «universal wellbeing» that is possible to be reached in a technological way"*. The radicalism of this approach risks cancelling any other thoughts, and this becomes a big problem because it excludes *"the validity to deduce our principles from the natural world, unconcerned by its derision and reaffirming its neglected validity"* (Havel, 2014). Given that we neither can nor want to negate technology or its presence in our daily lives, we ought to feel obligated to formulate a new ethic precisely because the uncertainty inherent in the consequences of actions enabled by technology is highly elevated. According to Hans Jonas, previous ethics are not able to take into account all of its new effects. So what are we to do? Certainly and firstly, we have to take note that we are ignorant of the consequences of many technologies. Technology has taught us to dominate as opposed to develop a sense of humility able to "*keep faith with doubt*". Technology has enabled what we were not able to do, and in doing so has generated certain dependencies. However, we need to be cautious in the face of this fabulously fast-acting and charmingly enabling property, as it can quickly trap us if we fail to understand fully the causal dimensions of our actions. Starting from their implications for natural resources, which are more and more limited and at risk, recognizing these dimensions remains an urgently imperative and precise responsibility necessary to guide the self-management of our immeasurable power (Jonas, 1974). In short, the forward momentum we call (technological) progress that seems more and more unlimited and unique to ourselves ought to force us to reflect on the coherence between action and effect and/or between present and future. If we abandon this reflective ability and leave it to the impersonal outcomes of technology to dictate the way ahead, we lose a degree of our dignity and individuality and we are taking a step towards behaving as programmed rote systems, and away from the humanity of individual responsibility (Jonas, 1974). In essence, the technological choice makes us fully human if it is taken with due responsibility and always reflected upon critically and without exception.

There is also another issue on which to dwell. It deals with the ease with which thought becomes accustomed to the immediate seductive power of technology without realizing what it is losing. The negative results are revealed much later and sometimes unexpectedly. The relationships among man and the city, energy, and natural resources aid us in understanding my argument (and

there are many contact points between energy and technology). We should begin by considering that in little more than sixty years, our beautiful cities have become monstrous consumers of energy, evermore voracious in using up fossil fuels and producing greater and greater amounts of waste and emissions. Our dependence on the Watt has grown to the point where cities are now hostage to a sort of "cult of the fossil" that has so invaded our existence by changing our practices, relationships, and lifestyles, compelling us to rely on habits and products without which we can no longer imagine how daily life would function (Sertorio and Renda, 2008). During this "energy invasion" (quite similar to the present technological invasion) we readily marginalize protests and warnings, and problems began to emerge in the most diverse forms: environmental (first the hole in the ozone layer and then climate change with its many associated issues), health (diseases such as cancer, allergies, infections) and social (inequality, war, poverty, discrimination, etc.). Yet these are just some examples of the problems that have occurred, of which we are aware, and sometimes for which we have a solution.

There is, however, another issue that has remained concealed for years. It acted more subtly and with the complicity of inattention, revealing itself only in some specific situations such as a disruption or collapse that suddenly demonstrates what we had lost but did not perceive at all. An insightful example is the long blackout in New York a few years ago that some authors recount (and not accidentally) as a case to explain what the commons are (Mattei, 2011). During the blackout, those who did not have cash to buy food almost died of hunger because they could not withdraw money from ATMs that were out of order. In the meanwhile, the trust between neighbours that would have enabled people to help each other by lending money to one another in a time of crisis had disappeared. This is a disturbing case-in-point that illustrates how our strong dependence on energy and technology has quietly eroded our ability for social solidarity and cooperation that has always been the truly valuable "social technology" that human beings have relied on for survival, even in disasters. Without this blackout, the erosion of social values would not have been perceived and no doubt energy, or technology, would continue to be uncritically regarded as positive and lifesaving (as it truly can be when it warns us in a very short time of imminent danger). Probably, these controversial and unexpected effects of the technological routine risk being more problematic and intense in the cities than in the smaller centres. Once again, the absence of critical analysis has allowed energy/technology to "get a free pass" in damaging the urban environment and the urban social capital developed throughout the generations. Its effects are multiplied by a context now totally dependent on the technology-energy coupling, the reliance on which has caused people to lose the ability to adapt, defend and survive as our rural predecessors were once very much able to do.

We ought, then, consider why the space of debate and critical reflection on this topic has been so drastically reduced if not eliminated entirely. Why are universities and research centres not adequately dedicating the intellectual resources necessary to understanding and trying to understand that the "brand" of the *smart city* is not all that glitters and may not conceal just a great illusion but also a grand deception if we do not develop the faculties needed for social defence and adaptation. In the previous age, that of (fossil) energy, an acute and critical observer such as Ivan Illich could realize that the wings with which urban society took off were made of wax and would easily melt when confronted with the usual promise of growth based on the excessive and unnecessary use of energy. That promise was leaving behind a field of violently unprecedented social conflict fuelled by the inequity built into the same contradictory idea of a society incapable of seeing that by binding itself to growth dependent on fossil fuels, it was also accepting the consequences of social discrimination and environmental degradation. *"High quanta of energy degrades social relations just as inevitably as it destroys the physical milieu"* (Illich, 1974). We must understand that among the many side effects produced by energy as well as by technology nowadays, the theme of accessibility remains paramount, first and foremost manifested in terms of fairness and equality. Does innovation really benefit everyone, all budgets, and all cultures? We know that nothing happens automatically and it is not a given that "innovation" will shelter us from phenomena such as social exclusion or discrimination.

If yesterday's economists were unable to escape the paradoxes between energy and society or between energy and the environment, those of today will not be able to escape from new paradoxes that the rapid spread of technology poses, especially in our cities; places of uncontrollable concentrations. Yet they probably believed that we would be better off (or at least that they would be?) riding the non-renewable energy wave as the only possible solution and building on that single model a relationship between man and his environment based on the irresponsible consumption of resources. The perverse economic culture seems to be pretty much accurate and it is unrecognizable to those who have refrained from being contaminated by the doubt of powerful concepts such as dissipation (of thermodynamics) or the commons. These two hybridizations have put today more than a crack in the singular economic thought that has always been so willing to silence dissenting voices. The ethics of consumerism, which according to a

growing number of scholars seems to be very similar to madness (Sertorio and Renda, 2008), is still far from extinguished and will try to reconfigure and manifest itself in possibly more pleasing, attractive and innocuous guises. Thus, a legitimate question that arises and with which we can conclude this section is: could the promise of technology be a mutation or guise of the consumerist economy that will reproduce the social contradictions and inequalities that plague us, our cities, and our relationship with natural resources?

Five subjects to strengthen civil society and political action

The issues mentioned here are some first starting points that could be submitted to a wide-ranging debate on the present and future of urban and environmental planning. They have no pretensions about being complete, but hopefully are usefully provocative.

No technology can fully renounce its dependence on energy

The first point concerns the fact that, upon closer examination, no technology can fully renounce its dependence on energy. And the relationship between energy and cities and societies is a key topic for our future. The efforts to foster a culture and behaviours able to consume less energy or to stop consuming entirely are limited, representing a sort of Lilliputian trial in the face of an energy-consuming Gulliver. For example, consider for a moment that the giant data sorting and aggregation world centres (to which the entire Internet is linked) consume in one year alone the equivalent of the energy produced by thirty nuclear power plants, with consumption rates predicted to increase (Granelli, 2013). This number would be crazy even if it referred to energy derived from sources other than fossil fuels. It is a number that confirms the intimate link between technology and energy and that we continue to be completely dependent on the production of energy. Even if we move to renewable or alternative sources, this will not be enough without reducing net consumption. So, today, it serves us to re-consider Jevons' nineteenth-century paradox (Wall, 2010): technological innovation tends to augment the use and consumption of resources while also improving the efficiency of consumption (and thereby giving the illusion that less is being consumed)[2]. The upshot of this is that even the smart city risks falling into Jevons 's paradox, which might just guarantee that we will consume fewer fossil fuels and more alternative energy or simply the same amount of fossil fuels but more efficiently. The overall balance would therefore not change. Global energy savings remain fugitive and the smart city tend to shift the use of energy instead of diminishing it. So the risk is to be palliative and unfortunately inconsequential. The smart city in fact continues (to want) to depend on energy in concert with technology without truly emancipating us from this dependence and certainly without regenerating our physical and cultural connections with nature or the social cooperation and solidarity between people. The smart city that we want is one with memory: one that remembers its successes and its failures; holding firm to the former but prepared to resolve the latter and constantly self-actualizing to never give up on the critical reflection needed to face the challenges of maintaining a balance among the environment, social equity and the good of future generations. We cannot and should not take everything we are used to with us into the future.

The problem of energy dependence includes the unequal access to energy (and technology)

The second reflection is nested in the first, and we can summarize it in the following way: not only must we resolve the problem of energy dependence but also unequal access to energy and to technology. Hermann Scheer, in the 1990s, advocated for the sole use of renewable energy and fully opening the energy market to make it accessible to everyone, even for free, just to break the bonds of energy addiction and to avoid new social conflicts (Scheer, 2011). If a growing number of urban services will be accessible through the using of smart technology, we have to face the possibility that new forms of technology could give rise to new forms of social exclusion. Even if many have not considered it, there obviously exists a strong connection between energy use, technology use and equity. This connection has not been well addressed and certainly remains unresolved. Rather, it passes from one era to another reproducing old social and generational conflicts (albeit in new forms). The transition to a new capitalism, the one of networks and technologies, will not be immune to reproducing old inequalities and to producing new ones as well — between countries, within countries, and especially between cities, opening new scenarios of "*urbapolitics*" and no longer geopolitics (Khanna and Khanna, 2012). It is therefore not hard to imagine that Ivan Illich, if he lived today, would title one of his pamphlets *New Technologies and New Inequities.* Technological innovation does not give us any automatic guarantee of being autonomously able to resolve the social conflicts generated by social and financial inequality or unequal access to technology. This is not to say that we should just give up on technology because it can produce new inequalities, but we need to approach this issue with a critical mind and a degree of skepticism, and be ready to seek solutions that are not 'ipso facto' given.

Differences between city and non-city may increase

Access to technology cannot be resolved by the banality of monetary exchange. The problem is not just one of having money for technology but rather that technological networks have a greater possibility to develop and multiply in cities, always generating greater differences in performance between cities and non-urban areas and between large cities and smaller centres. A new hierarchy of places is therefore developing and is likely to trigger new social inequalities and new geographies of exclusion. If, formerly, access to energy was an issue of distance and critical relations between nations that consumed fossil fuels and those that provided this resource, the transition to technology has pointedly caused some observers to claim that today's problems involve another set of geographies: the technological city versus the non-technological city with the risk of excluding remote cities and inland territories (Khanna and Khanna, 2012). New peripheries could soon be developed due to the inconveniences imposed by technological networks and/or the lack of access to them and/or the absence of firms able to invest in such distances and sparsities. How will we design these new territories? Will they be abandoned and with what consequences? Herein lies another battlefield between technology and the landscape.

New waves of uncontrolled and sprawling urbanization may be possible

The scenario in which the city becomes both protagonist and problem generates another reflection regarding what is outside the big cities. Indeed, with the inequalities between technological cities and non-technological cities, smart cities and non-smart cities, this may trigger new internal migrations and/or new urbanizations with all the associated negative social and environmental impacts (e.g., land consumption). This may seem like an unreal vision but if we follow Khanna and Khanna's paradoxical line of reasoning, their idea of the "hybrid reality" will bring together rapid growth and urbanization, especially in developing countries arriving at their own technological crest[3]. New waves of uncontrolled and sprawling urbanization then become not only possible but indeed probable, along with all the connected problems we now recognize therein. So, the question becomes what will the new role of urban planning be? At what scale? Will its approach be interdisciplinary or mono-disciplinary?

Nothing changes about the overuse of natural resources

The long-standing and increasingly serious problem of abuse of natural resources in an evermore voracious and ominous way continues to be a very present problem for the next generation. Here, technology solves very little if nothing at all. Not only do we remain dependent on energy, but we continue to consume or pollute our land, air and water; to plunder the land of precious minerals for our computers and cell phones; and to ravage the forests to generate large fields of corn for biofuels or photovoltaic energy that we then call "alternative energy." As technology is not a perfect substitute for natural resources, we find ourselves back at the beginning and with the need to construct a new ethics that establishes how and whether to use the planet's finite resources, the responsibility we have today for the environment and nature, and even how we begin to recognize the Earth's "civil rights" (Canova, 2011). And these new ethics are not only necessary because the previous ones were insufficient, but also because they could provide a new path for the creation of a new civic culture and politics that could serve and inspire our legislators and hopefully also our own discipline. No technologies are able to suggest a new ethic. Again we need the man to do this. We need to do this ourselves.

Conclusions: What could the role of politics be?

Unfortunately, this paper does not provide any answers but rather wishes to raise some questions for debate. Certainly, the advent of technology solves nothing automatically but rather continues to pose problems and multiply uncertainties. Even recent scholars who would be the most predisposed to welcome the new technological age have doubts. Khanna and Khanna implore us to consider *Tecnick* not only as technology in the most arid and purely deterministic sense that does not include any reflection on its effects on human beings, society and the environment. Much more important is *"Tecnick as the technological quotient of a civilization"* in a field where postmodern society determines the rules responsible for actively and regularly managing technology (Khanna and Khanna, 2012) that seek to anticipate risks, and prepare the capacity to defend against, stop, modify or even fully renounce distortionary processes if necessary. If it is clear we need technology and we cannot give up, it is equally important to agree to a critical and independent debate on its effects in many fields, including planning. The enabling power of technology is far more seductive today and it can reduce the spaces of the debate on its impacts on our sociality, on our idea of city and urban living, on our idea of energy, food, and nature, and on our ability to care for the environment and landscape. Surely it is easier to let technology decide the future of our lives, stringing us along, but this would, however, reduce us to a chronic dependence on and uncritical acceptance of technology in its most deterministic and insidious forms.

Future social and environmental effects that are so unpredictable are necessarily interesting for the field of public policy because it "*must address complex issues*

often so temporally distant. In reality, the diverse nature of human action changes the very nature of politics" (Jonas, 1974). This opens up a difficult and fascinating new challenge that is paradoxically also longstanding and unresolved. Public regulation is always a necessary social resource that crosses all epochs and thus today and especially tomorrow, public regulation must have the ability to regulate the dominating power of the technology.

Public action thus needs to be even stronger, more vigilant, and more objective in the face of the great influence by special interest groups that lobby on behalf of the production, spread, and use of technology. Here, again, Hans Jonas helps us in understanding with this key passage: "*If the new nature of our efforts requires a new ethic of responsibility [...] it also requires, in the name of the same responsibility, a new type of humility. It is different from the previous one in that it is not based on our limitations but rather on the greatest reaches of our capabilities, such as our ability to predict, evaluate and judge. Faced with the almost eschatological march of technology, the reality of not knowing what the final consequences will be becomes a reason to establish responsible limits.*" (Jonas, 1974). The challenges posed by technology illustrate the timeless importance of limits. Old issues persist but demand new responses. Luigi Einaudi's[4] theory of the "critical point" that has recently been revived by Italian economist, Luigino Bruni (Bruni, 2013), is germane here. According to this theory, most technologies produce undeniable innovations so long as they do not exceed a certain critical point, after which they create more problems than benefits. How many examples of this are there in the history of the relationship between cities and resources? But now the question is, who sets the limits and what are the salient features that a political force must have to establish when we reach a critical point? On this note, Hans Jonas posits that "*all this, in radical terms, returns us to the issue of the power of the 'wise man,' that is the power of critical ideas liberated from personal interests in the body politic*" (Jonas, 1974). The idea is clear. Where there exists a power such as technology that is so enabling but at the same time uncertain as to the damage it could cause in the future, the strength of public regulation is even more delicate and crucial, and therefore necessitates even greater autonomy, wisdom, and disinterest towards all forms of personal gain and political lobbying. A great challenge is to understand that technology does not guarantee a simpler future nor does it resolve any of the vices of our actions, but pushes us to a higher form of responsibility that requires the constant engagement of critical reflection and the strength and flexibility to change (drastically if necessary) our cultural beliefs and points of view to reconsider our politics and their actions. We do not want to, we cannot and we must not run from technology. Its use provides a great service, but this remains its limit, which cannot be sufficient. We now need plans and not tools, values and not numbers, strategies and not laws. We need to see that the public space for critical debate is guaranteed (Sanguineti, 2012) and that good practices have the necessary means to oppose strongly established and possibly corrupting ways of thinking that even technology often can pose and impose and that could perpetuate illusions that we don't need.

Endnotes

[1]Talking about technologies, we are not referring to a specific one, but more in general to the debate on technology and the cities that belongs to the wider topic known as 'smart city.'

[2]"William Stanley Jevons [...] argued in his book *The Coal Question* that technological improvements tend to increase the use of resources. The paradox also applies to greener forms of technology. [...] We need more radical alternatives because relentless increases in economic growth, even if accomplished by cleaner, greener ways of doing things, still tend to damage the environment" (Wall, 2010).

[3]Some studies predict the doubling or even tripling of urban areas between 2000 and 2030. Source: Institute for Advanced Sustainability Studies and Global Soil Forum, 2013, Soil Sealing, www.globalsoilweek.org.

[4]Luigi Einaudi was a prominent anti-fascist politician, economist and journalist in Italy during the inter-war years, the Second World War and the early years of the First Republic, rising to the position of Governor of the Bank of Italy, and ultimately becoming the second President of the Italian Republic.

Competing interests
The author declares that he has no competing interests.

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